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☐	L11	(sequential near5 playback) same (visualiz$ near5 network$)	0
☐	L10	(sequential near5 playback) same (heterogeneous near5 network$)	1
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of **event**- based **data** that can be collected for **network** security and ...
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... Discovery of frequent episodes in **event** sequences. ... Keywords: Sequential/**Temporal**
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... **Temporal** association rules were introduced to capture relationship among object
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from **network event** logs for ... to nd dependencies in **event data** may be ...
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<u>FIU-SCS **Event**: Knowledge Discovery in Text and **Temporal Data**</u>
... I will discuss the problem of discovering **temporal** patterns in **event data**. ... the results
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Introduction of TDF: the Basic Form
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... The specifications of intelligent **networking** are too abstract ... tutorial, but for
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... a **heterogeneous network** is also typical in local area workstation clusters, which
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Windows NT Server: Bringing Heterogeneous Networks Together ...
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networks may be used to describe a streaming multi-media application. ...
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Coarse Grained Parallel Computing on Heterogeneous Systems - Morin ...
... of CGP algorithms, namely in **heterogeneous systems**, and shows that this approach
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... **systems** have a mix of these requirements, the trend toward **heterogeneous system**

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design is ... It is possible to use standard .network protocols like TCP/IP, but ...
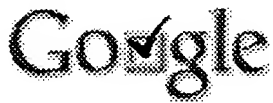www.rtcmagazine.com/home/article.php?id=100055 - 43k - Cached - Similar pages

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Louise ...
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IPDPS **2001**
... 10 th **Heterogeneous** Computing Workshop - HCW **2001** (Workshop 1). ... Hariri, CS
Raghavendra: An Adaptive Communication **System** for **Heterogeneous Network**
Computing ...
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... 12 n.10, p.1033-1051, October **2001**. ... to high performance computing on
heterogeneous networks, Parallel and ... language and its programming **system** for
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Distributed Sensor **Networks** Reading List
... Control Scheme for Media Access in Sensor **Networks**," Alec Woo, David Culler,
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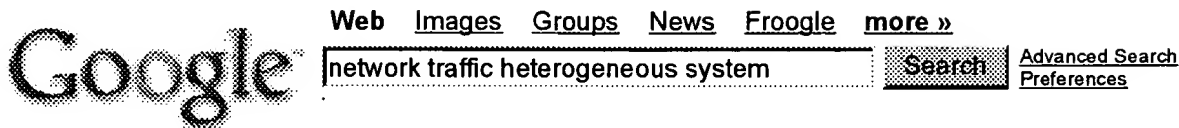Result Page: 1 2 3 4 5 6 7 8 9 10   **Next**

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from all ... for ONC RPC ensuring interoperability across **heterogeneous systems**. ...
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... power control and noise", ACM/Baltzer J. Wireless **Networks**, vol ... Bhargava, "Design
issues in a CDMA cellular **system** with **heterogeneous traffic** types", IEEE ...
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Modeling heterogeneous network traffic in wavelet domain

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Authors   Sheng Ma IBM T. J. Watson Research Center, Hawthorne, NY
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↑ ABSTRACT

Heterogeneous network traffic possesses diverse statistical properties which include complex temporal correlation and non-Gaussian distributions. A challenge to modeling heterogeneous traffic is to develop a traffic model which can accurately characterize these statistical properties, which is computationally efficient, and which is feasible for analysis. This work develops wavelet traffic models for tackling these issues. In specific, we model the wavelet coefficients rather than the original traffic. Our approach is motivated by a discovery that although heterogeneous network traffic has the complicated short- and long-range temporal dependence, the corresponding wavelet coefficients are all "short-range" dependent. Therefore, a simple wavelet model may be able to accurately characterize complex network traffic. We first investigate what short-range dependence is important among wavelet coefficients. We then develop the simplest wavelet model, i.e., the independent wavelet model for Gaussian traffic. We define and evaluate the (average) autocorrelation function and the buffer loss probability of the independent wavelet model for Fractional Gaussian Noise (FGN) traffic. This assesses the performance of the independent wavelet model, and the use of which for analysis. We also develop (low-order) Markov wavelet models to capture additional dependence among wavelet coefficients. We show that an independent wavelet model is sufficiently accurate, and a Markov wavelet model only improves the performance marginally. We further extend the wavelet models to non-Gaussian traffic through developing a novel time-scale shaping algorithm. The algorithm is tested using real network traffic and shown to outperform FARIMA in both efficiency and accuracy. Specifically, the wavelet models are parsimonious, and have the computation complexity $O(N)$ in developing a model from a training sequence of length N, and $O(M)$ in generating a synthetic traffic trace of length M.

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    PGPUB-FILING-TYPE: new
    DOCUMENT-IDENTIFIER: US 20020143929 A1

    TITLE: Method and system for collection and storage of traffic data from
    heterogeneous network elements in a computer network

    PUBLICATION-DATE: October 3, 2002

    INVENTOR-INFORMATION:
    NAME   CITY   STATE   COUNTRY   RULE-47
    Maltz, David A.   Los Altos   CA   US
    Broch, Joshua G.   Cupertino   CA   US
    Dunn, P. Bradley   Palo Alto   CA   US

    US-CL-CURRENT: 709/224; 709/226

Term	Documents
NETWORK$	0
NETWORK	897461
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☐ 1. Document ID: US 20040117476 A1

Using default format because multiple data bases are involved.

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PGPUB-DOCUMENT-NUMBER: 20040117476
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040117476 A1

TITLE: Method and system for performing load balancing across control planes in a
data center

PUBLICATION-DATE: June 17, 2004

INVENTOR-INFORMATION:
NAME                     CITY            STATE     COUNTRY     RULE-47
Steele, Doug             Fort Collins    CO        US
Hogan, Katherine         Fort Collins    CO        US
Schloss, Rheid           Fort Collins    CO        US

US-CL-CURRENT: 709/224; 709/225
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| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D |

☐ 2. Document ID: US 20020019869 A1

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L22: Entry 2 of 3                    File: PGPB              Feb 14, 2002

PGPUB-DOCUMENT-NUMBER: 20020019869
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020019869 A1

TITLE: System and method for modeling and provisioning information system capacity

PUBLICATION-DATE: February 14, 2002

INVENTOR-INFORMATION:
NAME                     CITY            STATE     COUNTRY     RULE-47
Goldszmidt, Moises       Moss Beach      CA        US
Sabata, Bikash           Menlo Park      CA        US
Palma, Derek             Union City      CA        US
Raha, Amitava            San Jose        CA        US
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US-CL-CURRENT: <u>709</u>/<u>224</u>; <u>709</u>/<u>227</u>

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw De |

   ☐ 3.   Document ID: US 5761502 A

L22: Entry 3 of 3   File: USPT   Jun 2, 1998

US-PAT-NO: 5761502
DOCUMENT-IDENTIFIER: US 5761502 A

TITLE: System and method for managing a telecommunications network by associating and correlating network events

DATE-ISSUED: June 2, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Jacobs; Andrew Robin	Colorado Springs	CO		,

US-CL-CURRENT: <u>707</u>/<u>103R</u>; <u>379</u>/<u>221.09</u>, <u>379</u>/<u>221.15</u>, <u>379</u>/<u>279</u>, <u>707</u>/<u>10</u>, <u>709</u>/<u>242</u>, <u>714</u>/<u>26</u>

| Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw De |

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   L38: Entry 1 of 4                      File: USPT            Feb 3, 2004

US-PAT-NO: 6687750
DOCUMENT-IDENTIFIER: US 6687750 B1

TITLE: Network traffic visualization

DATE-ISSUED: February 3, 2004

INVENTOR-INFORMATION:
NAME                      CITY         STATE      ZIP CODE       COUNTRY
Messinger; Fred           Groton       MA
Swallow; George           Concord      MA
```

US-CL-CURRENT: 709/224; 703/6, 709/202, 709/217, 709/223, 709/229, 713/201, 714/47

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw De

☐ 2. Document ID: US 6223188 B1

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   L38: Entry 2 of 4                      File: USPT            Apr 24, 2001

US-PAT-NO: 6223188
DOCUMENT-IDENTIFIER: US 6223188 B1

TITLE: Presentation of link information as an aid to hypermedia navigation

DATE-ISSUED: April 24, 2001

INVENTOR-INFORMATION:
NAME                      CITY              STATE   ZIP CODE    COUNTRY
Albers; Michael C.        San Francisco     CA
Bergman; Eric D.          Palo Alto         CA
```

US-CL-CURRENT: 715/501.1

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw De

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☐ 3.   Document ID: US 5706436 A

L38: Entry 3 of 4   File: USPT   Jan 6, 1998

US-PAT-NO: 5706436
DOCUMENT-IDENTIFIER: US 5706436 A
** See image for **Certificate of Correction** **

TITLE: Apparatus and method for evaluation network traffic performance

DATE-ISSUED: January 6, 1998

INVENTOR-INFORMATION:
NAME	CITY	STATE	ZIP CODE	COUNTRY
Lewis; Lundy	Mason	NH		
Datta; Utpal	Bedford	NH		

US-CL-CURRENT: 709/235; 703/21, 709/224

| Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw D |

☐ 4.   Document ID: US 5640504 A

L38: Entry 4 of 4   File: USPT   Jun 17, 1997

US-PAT-NO: 5640504
DOCUMENT-IDENTIFIER: US 5640504 A

TITLE: Distributed computing network

DATE-ISSUED: June 17, 1997

INVENTOR-INFORMATION:
NAME	CITY	STATE	ZIP CODE	COUNTRY
Johnson, Jr.; Harold E.	Newtown	PA		

US-CL-CURRENT: 714/4; 713/2

| Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw D |

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Term	Documents
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REALA-TIME	1

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PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040172466 A1


TITLE: Method and apparatus for monitoring a network


PUBLICATION-DATE: September 2, 2004


INVENTOR-INFORMATION:
NAME                               CITY              STATE   COUNTRY     RULE-47
Douglas, Christopher Paul          Loveland          CO      US
Dorland, Chia-Chu                  Fort Collins      CO      US


US-CL-CURRENT: 709/224; 345/736
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| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D |

☐ 2.   Document ID: US 20020177907 A1

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    L3: Entry 2 of 8                          File: PGPB              Nov 28, 2002


PGPUB-DOCUMENT-NUMBER: 20020177907
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020177907 A1


TITLE: Method and apparatus for replaying and visualizing post-performance metrics
for a complex heterogeneous data space


PUBLICATION-DATE: November 28, 2002


INVENTOR-INFORMATION:
NAME                               CITY              STATE   COUNTRY     RULE-47
Hand, Leonard S.                   Trophy Club       TX      US
Washburn, Jeffery R.               Roanoke           TX      US


US-CL-CURRENT: 700/1
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`Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D`

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L3: Entry 3 of 8   File: PGPB   Nov 28, 2002

PGPUB-DOCUMENT-NUMBER: 20020175956
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020175956 A1

TITLE: Method and apparatus for efficiently exposing nodes of a display map while
monitoring metrics in a complex heterogeneous system

PUBLICATION-DATE: November 28, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Hand, Leonard S.	Trophy Club	TX	US	
Washburn, Jeffery R.	Roanoke	TX	US	

US-CL-CURRENT: 345/853

`Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D`

☐ 4.   Document ID: US 20020175941 A1

L3: Entry 4 of 8   File: PGPB   Nov 28, 2002

PGPUB-DOCUMENT-NUMBER: 20020175941
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020175941 A1

TITLE: Method and apparatus for visualizing metrics in a data space

PUBLICATION-DATE: November 28, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Hand, Leonard S.	Ft. Worth	TX	US	
Washburn, Jeffery R.	Roanoke	TX	US	

US-CL-CURRENT: 345/764

`Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D`

☐ 5.   Document ID: US 20020175934 A1

L3: Entry 5 of 8   File: PGPB   Nov 28, 2002

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PGPUB-DOCUMENT-NUMBER: 20020175934
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020175934 A1

TITLE: Method and apparatus for efficiently and dynamically updating monitored metrics in a heterogeneous system

PUBLICATION-DATE: November 28, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Hand, Leonard S.	Trophy Club	TX	US	
Washburn, Jeffery R.	Roanoke	TX	US	

US-CL-CURRENT: 345/734

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D |

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6. Document ID: US 20020175941 A1

L3: Entry 6 of 8   File: DWPI   Nov 28, 2002

DERWENT-ACC-NO: 2003-265990
DERWENT-WEEK: 200326
COPYRIGHT 2004 DERWENT INFORMATION LTD
TITLE: Metrics monitoring and visualization method in dynamic data space, involves using graphical user interface that changes in order to reflect changes that occur in selection of metrics

INVENTOR: HAND, L S; WASHBURN, J R

PRIORITY-DATA: 2001US-0865368 (May 25, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 20020175941 A1	November 28, 2002		012	G09G005/00

INT-CL (IPC): G09 G 5/00

| Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw D |

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7. Document ID: US 20020175956 A1

L3: Entry 7 of 8   File: DWPI   Nov 28, 2002

DERWENT-ACC-NO: 2003-255365
DERWENT-WEEK: 200325
COPYRIGHT 2004 DERWENT INFORMATION LTD
TITLE: Node exposing method for monitoring components of dynamic heterogeneous system, involves updating display of node such that updated display reflects updated value of component

h   e b   b g ee e f   e   ef   b   e

INVENTOR: HAND, L S; WASHBURN, J R

PRIORITY-DATA: 2001US-0865394 (May 25, 2001)

PATENT-FAMILY:

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INT-CL (IPC): G06 F 3/00; G06 F 13/00

| Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw De |

☐ 8.   Document ID: US 20020175934 A1

L3: Entry 8 of 8   File: DWPI   Nov 28, 2002

DERWENT-ACC-NO: 2003-255363
DERWENT-WEEK: 200325
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TITLE: Dynamic network node metrics reporting method for complex heterogeneous system, involves repeating probing of content delivery component for reporting determine metric values to recipient graphical display interface

INVENTOR: HAND, L S; WASHBURN, J R

PRIORITY-DATA: 2001US-0865369 (May 25, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 20020175934 A1	November 28, 2002		014	G06F013/00

INT-CL (IPC): G06 F 13/00

| Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw De |

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Term	Documents
HETEROGENEOUS	78135
HETEROGENEOU	45
SYSTEM	6078111
SYSTEMS	2066040
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(L2 AND (HETEROGENEOUS SYSTEM)).PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD.	8

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Search Results - Record(s) 1 through 4 of 4 returned.

☐   1.   Document ID: US 6298385 B1

Using default format because multiple data bases are involved.

    L23: Entry 1 of 4   File: USPT   Oct 2, 2001

US-PAT-NO: 6298385
DOCUMENT-IDENTIFIER: US 6298385 B1

TITLE: Method and apparatus for optimizing playback of media files over a data
network

DATE-ISSUED: October 2, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sparks; Randall B.	Lafayette	CO		
Turner; C. Reid	Boulder	CO		
Weich; Craig I.	Boulder	CO		
Lund; Arnold M.	Louisville	CO		

US-CL-CURRENT: 709/233

| Full | Title | Citation | Front | Review | Classification | Date | Reference | | | | Claims | KWIC | Draw De |

☐   2.   Document ID: DE 10140161 A1

    L23: Entry 2 of 4   File: EPAB   Mar 20, 2003

PUB-NO: DE010140161A1
DOCUMENT-IDENTIFIER: DE 10140161 A1
TITLE: Method for controlling access of a multimedia client to a server providing
multimedia data, whereby all the data is transferred to the client before playback
begins, thus ensuring optimum playback independent of network bandwidth

PUBN-DATE: March 20, 2003

INT-CL (IPC): G06 F 3/14; G06 F 13/00

| Full | Title | Citation | Front | Review | Classification | Date | Reference | | | | Claims | KWIC | Draw De |

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☐   3.   Document ID: US 6792468 B1

L23: Entry 3 of 4   File: DWPI   Sep 14, 2004

DERWENT-ACC-NO: 2004-666270
DERWENT-WEEK: 200465
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TITLE: Recorded media data playback method in data network, involves transmitting
requests obtained by conversion of playback control signal, to server by
transmitting one request per unit time, to store respective frames in server

INVENTOR: BEALL, J E; BLOCH, E D ; DURAND, G A ; HILL, R

PRIORITY-DATA: 1999US-0441722 (November 16, 1999), 1996US-0733478 (October 18,
1996)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 6792468 B1	September 14, 2004		014	G06F015/16

INT-CL (IPC): G06 F 15/16

| Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw D |

☐   4.   Document ID: DE 10140161 A1

L23: Entry 4 of 4   File: DWPI   Mar 20, 2003

DERWENT-ACC-NO: 2003-373224
DERWENT-WEEK: 200336
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TITLE: Method for controlling access of a multimedia client to a server providing
multimedia data, whereby all the data is transferred to the client before playback
begins, thus ensuring optimum playback independent of network bandwidth

PRIORITY-DATA: 2001DE-1040161 (August 22, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
DE 10140161 A1	March 20, 2003		008	G06F003/14

INT-CL (IPC): G06 F 3/14; G06 F 13/00

| Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw D |

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Term	Documents
DYNAMIC	495358
DYNAMICS	61823

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REALA-TIME	1
REALIGTIME	1
REALITIME	2
REALI-TIME	1
REALLTIME	1
REALL-TIME	5
REALOTIME	1
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